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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,896	12/27/2005	Masanori Sakai	2342-0140PUS1	2272
2292 7590 07/10/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER CHANDRA, SATISH	
			ART UNIT 1763	PAPER NUMBER
			NOTIFICATION DATE 07/10/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/529,896

Applicant(s)

SAKAI ET AL.

Examiner

Satish Chandra

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication; even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 15 is/are pending in the application.
- 4a) Of the above claim(s) 11 - 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/05, 12/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Newly submitted claims 11 – 15 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 1 – 10 are related to apparatus whereas the new claims 11 – 15 are related to method claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11 – 15 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (US 2002/0073923) in view Lam et al (US 2004/0008336).

Saito et al discloses a substrate processing apparatus comprising:

A reaction chamber 11 (Fig 1)

An exhaust port 61 (Para 0099) for exhausting gases from the reaction chamber

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A gas supply system 35a, 35b, 35c and 35d for supplying at least a plurality of reaction gases (such as DCS, SiH_2Cl_2 and ammonia, Para 0093, 0094) to the reaction chamber wherein the gas supply system comprises:

A cleaning gas supply unit, 35d (Para 0097) for supplying cleaning gas (such as HF, Para 0097) to the reaction chamber

Post-processing gas supply units (reaction gas supply units) 35a, 35b for supplying post processing gas through the gas supply pipes (nozzles) 31a, 31b, 31c in the reaction chamber (Paras 0093, 0094, 0095 and 0097) wherein each of the reaction gases supplied from the post processing gas supply units remove the element remaining in the exclusive supply nozzles and the reaction chamber and form a desired film in the reaction chamber.

A controller 75 for controlling the function of all the valves 35a to 35d, 36a and 36b and controls the temperature of each part of the apparatus (Paras 0122, 0124)

Saito does not disclose:

The controller controlling the post-processing gas supplying the post-processing gas after the cleaning gas is supplied to the said container and before the substrate is placed in the container,

Lam et al discloses:

Regarding claim 1, an alternate method of determining the seasoning state of a plasma processing system, wherein cleaning process is completed first before the seasoning process (Para 0067) and before the first substrate is brought in the chamber,

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to program the controller of Saito et al to implement the cleaning step before the seasoning step as taught by Lam et al,

The motivation for cleaning step followed by the seasoning step is to trap any adsorbed gases or ions on the inside of the chamber and prevent contamination of the subsequently deposited films.

Claims 4 – 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (US 2002/0073923) in view Lam et al (US 2004/0008336) as discussed in claims 1 – 3, 8 and 9 above and further in view of Okuda et al (US 2003/0024477).

Saito et al and Lam et al were discussed above and further teaches:

Cleaning gas (source 35 d, fig 1) is a gas (HF) containing fluorine and the gas including silicon is the first gas DCS (SiH_2Cl_2 , Para 0093).

Saito et al and Lam et al do not teach:

A plasma unit for exciting gases in the chamber.

Okuda et al teaches:

A plasma-producing unit 17 (Fig1), which is provided at one side of the lower portion of the reaction tube 12 to produce plasma of the reaction gases.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a plasma producing unit in the apparatus of Saito et al and Lam et al as taught by Okuda et al.

The motivation of providing a plasma producing unit in the apparatus of Saito et

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al and Lam et al is to provide a means to excite the reaction gases as taught by Okuda et al.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (US 2002/0073923) in view of Lam et al (US 2004/0008336) and Okuda et al (US 2003/0024477) as applied to claims 4 –6 and 10 above and further in view of Choi et al (US 6,279, 503).

Saito et al, Lam et al and Okuda et al do not teach if the cleaning gas is NF3 or ClF3.

Choi et al discloses ClF3 as the cleaning gas (Column 4, lines 34 – 37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use ClF3 as the cleaning gas in the apparatus of Saito et al, Lam et al and Okuda et al as taught by Choi et al.

The motivation to use ClF3 gas is that it is an alternate and equivalent gas for cleaning the pipe lines and the chamber walls as taught by Choi et al.

Response to Arguments

Applicant's arguments with respect to claims 1 - 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satish Chandra whose telephone number is 571-272-3769. The examiner can normally be reached on 8 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, Primary Examiner, Jeffrie R. Lund can be reached on 571-272-1437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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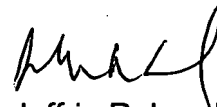
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Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Satish Chandra



Jeffrie R. Lund
Primary Examiner

SC

6/29/2007